



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,439	01/31/2006	Eckhard Wolfgang	1454.1671	3860
21171	7590	01/22/2009	EXAMINER	
STAAS & HALSEY LLP			KALAM, ABUL	
SUITE 700			ART UNIT	
1201 NEW YORK AVENUE, N.W.			PAPER NUMBER	
WASHINGTON, DC 20005			2814	
			MAIL DATE	
			DELIVERY MODE	
			01/22/2009	
			PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/566,439

Applicant(s)

WOLFGANG ET AL.

Examiner

Abul Kalam

Art Unit

2814

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-15, 17-21, 23 and 34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-15, 17-21, 23 and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 29, 2008, has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 11-15, 17-21, 23 and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hase et al. (WO 2003/030247; cited by Applicant)** in view of **Chu et al. (US 6,365,498; cited by Applicant)**. Note that the WO 2003/030247 reference is a publication of international application PCT/DE02/03615, and that the U.S. application 10/491137 is a national stage entry of the international application. Therefore, the U.S. 2005/0032347 document, which is a publication of the U.S. application 10/491137, will be used as an English translation for the WO 2003/030247 reference.

With respect to **claims 11 and 24**, **Hase** teaches a circuit device provided on a substrate (**10-12, Fig. 2 of US 2005/0032347**) and comprising:

a single active semiconductor component (2, Fig. 2; ¶ [0056]) arranged on a top surface of the substrate (10-12) and having an outer electrical contact surface (¶ [0068]; top surface of chip 2, Fig. 2), the single active semiconductor component (2) being a power semiconductor component (¶ [0058]: "power semiconductor chip"); and at least one electrical connection line (4, Fig. 2; ¶ [0070]) on the substrate (10-12) to contact with the outer electrical contact surface of the semiconductor component (¶ [0070]),

wherein the electrical connection line (4, Fig. 2) contacts the outer electrical contact surface at an electrical contact, such the electrical contact faces away from the substrate (¶ [0070]-[0071]); and

a layer of laminated electrically insulating film (3, Fig. 2) is laminated onto a least two surfaces of the semiconductor component (2, Fig. 2; ¶ [0063]) and the substrate (10-12) in such a way that the electrical contact is exposed (Fig. 2; ¶ [0067]).

Thus, Hase teaches all the limitations of the claim with the exception of explicitly disclosing wherein the electrical connection line is part of at least one discrete passive electrical component arranged on the substrate.

However, Chu teaches a circuit device on a substrate (22, Fig. 3) wherein an electrical connection line (40, Fig. 3) is part of at least one discrete passive component (48, Fig. 3; col. 6, Ins. 3-18) arranged on the substrate (22). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to incorporate the teaching of Chu into the device of Hase, thereby forming a passive electrical component using a part of an electrical connection line, for the purpose of

Art Unit: 2814

providing integrated circuit devices with both active and passive elements, while reducing manufacturing costs by integrating methods for I/O redistribution and passive components fabrication (**Chu: col. 4, Ins. 58-60**).

With respect to **claim 12**, which is dependent on claim 11, **Chu** teaches wherein the discrete passive electrical component is a capacitor (**48, Fig. 3; col. 6: Ins. 5-21**) and the electrical connection line (**40**) is an electrode of the capacitor (**48**).

With respect to **claim 13**, which is dependent on claim 11, **Chu** teaches wherein the discrete passive electrical component is a coil (**36, Fig. 2E**), and the electrical connection line (**30; col. 5: Ins. 57-67**) is a winding of the coil (**col. 4: Ins. 45-48**).

With respect to **claim 14**, which is dependent on claim 11, **Chu** teaches wherein the discrete passive electrical component is an electrical resistor (**36, 38, Figs. 2C and 2D**), and the electrical connection line (**30**) is a wire resistor (**col. 5: Ins. 57-67**).

With respect to **claim 15**, which is dependent on claim 11, **Chu** teaches wherein the discrete passive electrical component is a part of a sensor of a physical variable (**the electrical wire resistors 36 and 38, formed from connection line 30 can act as temperature sensors**).

With respect to **claim 17**, which is dependent on claim 11, **Hase** teaches wherein the semiconductor component is a power semiconductor component (**¶ [0058]**), and regarding the limitations of MOSFETs, IGBTs and bipolar transistors, note that such active semiconductor components are well known and conventional in the art.

With respect to **claim 18**, which is dependent on claim 14, **Chu** teaches wherein the discrete passive electrical component is a part of a sensor of a physical variable

(the electrical wire resistors 36 and 38, formed from connection line 30, can act as temperature sensors).

With respect to **claims 19 and 20**, which is dependent on claim 18, **Hase** teaches wherein the semiconductor component is a power semiconductor component (**¶ [0058]**), and regarding the limitations of MOSFETs, IGBTs and bipolar transistors, note that such active semiconductor components are well known and conventional in the art.

With respect to **claim 21**, **Hase** teaches a method for producing a circuit device (**Fig. 2 of US 2005/0032347**), comprising:

producing a single active semiconductor component (**2, Fig. 2; ¶ [0056]**) on a top surface of the substrate (**10-12, Fig. 2**), the semiconductor component having an outer electrical contact surface (**¶ [0068]; top surface of chip 2, Fig. 2**) facing away from the substrate, the single active semiconductor component (**2**) being a power semiconductor component (**¶ [0058]: "power semiconductor chip"**);; and

producing an electrical connection line (**4, Fig. 2; ¶ [0070]**) that o contact with the outer electrical contact surface of the semiconductor component (**¶ [0070]**),

wherein the electrical connection line (**4, Fig. 2**) contacts the outer electrical contact surface at an electrical contact, such the electrical contact faces away from the substrate (**¶ [0070]-[0071]**); and

laminating a layer of electrically insulating film (**3, Fig. 2**) onto the semiconductor component (**2, Fig. 2; ¶ [0063]**) and the substrate (**10-12**) in such a way that the electrical contact is exposed (**Fig. 2; ¶ [0067]**).

Thus, **Hase** teaches all the limitations of the claim with the exception of explicitly disclosing wherein the electrical connection line is part of one discrete passive electrical component arranged on the substrate.

However, **Chu** teaches a circuit device on a substrate (**22, Fig. 3**) wherein an electrical connection line (**40, Fig. 3**) is part of one discrete passive component (**48, Fig. 3; col. 6, Ins. 3-18**) arranged on the substrate (**22**). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to incorporate the teaching of Chu into the device of Hase, thereby forming a passive electrical component using a part of an electrical connection line, for the purpose of providing integrated circuit devices with both active and passive elements, while reducing manufacturing costs by integrating methods for I/O redistribution and passive components fabrication (**Chu: col. 4, Ins. 58-60**).

With respect to **claim 23**, which is dependent on claim 21, **Hase** teaches wherein the layer of electrically insulating film (**3, Fig. 2**) is first applied, and then the electrical contact is exposed by opening a window (**31, Fig. 2**) in the electrically insulating material (**[0063]-[0067]**).

Response to Arguments

2. Applicant's arguments filed December 29, 2008, have been considered but are not persuasive.

Regarding claims 11, 21, and 24, Applicant argues that Chu does not disclose a semiconductor component which is a power semiconductor component. The argument

is not persuasive. Note that the grounds for rejection of claims 11, 21, and 24 are are under 35 U.S.C. 103(a) as being unpatentable over Hase et al. (WO 2003/030247) in view of Chu et al. (US 6,365,498). Furthermore, the primary reference Hase et al. teaches that the single active semiconductor component (2, Fig. 2) is a power semiconductor chip (¶ [0058]), and thus Hase et al., and not Chu et al., is relied upon for teaching the newly added limitation. In response to applicant's arguments against the Chu reference individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding Applicant's arguments against the combination of Hase et al. and Chu et al., note that it is not critical for Chu to teach a power semiconductor component because both of the references are drawn to integrated circuit and methods of contacting the integrated circuits. Thus, the references are in the same field of endeavor, and considered to be analogous art. Furthermore, Chu's disclosure of a passive electrical component formed by using a part of an electrical connection line, for the purpose of providing integrated circuit devices with both active and passive elements, while reducing manufacturing costs, is applicable to any integrated circuits, include those with power semiconductor components. Also, note that power semiconductor components are well known and conventional in integrated circuits (Hase: ¶ [0005]-[0010]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abul Kalam whose telephone number is (571)272-8346. The examiner can normally be reached on Monday - Friday, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. K./
Examiner, Art Unit 2814

/Phat X. Cao/
Primary Examiner, Art Unit 2814